

AMENDMENT TO THE CLAIMS

1.(Previously Presented) A disc processing apparatus comprising a support, a picker arm for lifting and transporting discs, the discs having a planar surface, said picker arm being moveable substantially perpendicular to the planar surface of a disc, a picker on the picker arm for picking up a disc for transport, and a sensor carried by the picker arm for sensing the presence of a disc with the planar surface of the disc at a known position relative to the picker arm.

2.(Previously Presented) The apparatus of claim 1, wherein the picker arm is movable substantially perpendicular to the planar surface of a disc held by the picker.

3.(Previously Presented) The apparatus of claim 1, wherein said picker arm is moveable along an axis perpendicular to the planar surface of a disc supported on the picker, and wherein the sensor comprises a mechanical element that engages a disc in a lifting position of the picker to provide a signal indicating that a surface of a disc is at a known relationship to the picker arm in a direction perpendicular to the planar surface of the disc.

4.(Previously Presented) The apparatus of claim 3, wherein said mechanical element comprises a pivoting lever, said lever having a portion that initiates a signal when the lever pivots due to the lever moving to engage a planar surface of a disc at the known position relative to the picker arm.

5.(Previously Presented) The apparatus of claim 1, wherein said sensor has two states, a first state indicating the absence of a planar surface at a known position relative to the picker arm, and a second state when a planar surface is at the known position relative to the picker arm.

6.(Previously Presented) The apparatus of claim 1, wherein the picker arm is mounted on the processing apparatus for movement substantially parallel to the planar surface of a disc held by the picker.

7.(Previously Presented) The apparatus of claim 6 including a controller for controlling movement of the picker arm perpendicular to and parallel to the planar surface of a disc held by the picker.

8.(Previously Presented) The apparatus of claim 7, wherein the movement of the picker arm perpendicular to the planar surface of a disc held by the picker is sensed by the controller.

9.(Previously Presented) An apparatus for processing discs including a frame, an input bin for storing a plurality of discs in a stack centered along a central axis perpendicular to the discs, a picker arm for removing discs from the stack including a disc picker, said picker arm being moveable in a direction substantially parallel to the central axis, the picker arm overlying a portion of a top disc in the stack when the disc picker is in position to lift a top disc, a sensor on the picker arm to sense the presence of a top disc on the disc picker with the top disc in position to be lifted by the disc picker and provide a signal when a top disc is present, and a controller receiving the signal indicating a top disc is present and providing control signals for controlling the apparatus based upon the signal at selected positions of the picker arm.

10.(Original) The apparatus of claim 9, wherein the controller includes means to determine whether a proper number of discs are in the stack when the picker is in position to lift the top disc of the stack.

11.(Original) The apparatus of claim 9 including a drive for moving the picker arm laterally relative to the axis of the stack, and for positioning the picker arm over a disc support tray for processing.

12.(Original) The apparatus of claim 11 wherein the apparatus has a disc support tray moveable to a loading position, and the picker arm being moveable downwardly toward the disc support

tray, the sensor being engageable with a disc in the tray to provide the signal when such disc is present in the tray.

13.(Previously Presented) A compact disc processor including a processing station, and including a disc support tray moveable between a disc loading position and the processing station, a compact disc handler mounted on the processor, said handler having a picker for picking a disc from a storage bin, the handler being moveable from a position overlying the storage bin to a position overlying the tray, and a sensor carried by the handler for sensing when the picker is holding a disc in position for movement between the storage bin and the tray.

14.(Original) The processor of claim 13 wherein a controller receives information indicating the position of the handler relative to a height of a stack of discs in the bin, and wherein the sensor provides a signal to the controller when the handler is adjacent to the stack indicating the height of the stack when a top disc in the stack is sensed, the controller correlating the height indicated by the signal to an expected stack height.

15.(Previously Presented) A method of determining the number of discs that have been removed from a stack of discs by a robotic handler after the handler has removed at least one disc from the stack and deposited the at least one disc in a remote location, comprising moving the handler to overlie the stack, sensing a spacing between the handler and a top remaining disc in the stack, and comparing the position of the handler when it is at the sensed spacing from the top remaining disc in the stack with a reference indicating the correct height of the stack after a single disc was previously removed and moved by the handler to the remote location, to determine whether more than one disc was previously removed.

16.(Previously Presented) The method of claim 15 wherein said sensor comprises a mechanical sensor that senses a surface of the top remaining disc in the stack that is capable of being supported on the handler.

17.(Previously Presented) A method of error checking for a compact disc processor having an extendable and retractable disc support tray moveable from a disc loading position to a processing station, an input disc storage bin for supporting a stack of a plurality of discs centered on an axis, and a handler comprising a picker moveable parallel to the axis and laterally to the axis to lift and move a disc from the stack to the tray when the tray is in a loading position, comprising the steps of depositing a disc in the tray with the handler, moving the handler back to overlie the stack and moving the handler to a position to sense the height of the stack, by sensing the spacing between the handler and a top disc in the stack, and determining if the height of the stack is correct for previous removal of a single disc.

18.(Previously Presented) The method of claim 17 wherein prior to moving the handler to lift and move a disc from the stack, the handler is moved to overlie the tray in the loading position, and moving the handler toward the tray to sense whether there is a disc in the tray.

19.(Currently Amended) The method of claim 17 wherein a disc is processed and the tray is moved to the loading position with the processed disc, moving the handler in a cycle having a down portion and an up portion to pick up the processed disc, sensing whether a processed disc is supported by the handler in the up portion of the cycle, and moving the tray to the processing station and back to the unloading station if no disc is supported in the up portion of the cycle.